

ABSTRACT

Fire prevention and suppression systems and breathable fire-extinguishing compositions are provided for rooms, houses and buildings, transportation tunnels and vehicles, underground and underwater facilities, marine vessels, aircraft, space stations and vehicles, military installations and vehicles, and other human occupied objects and facilities. The system provides a low-oxygen (hypoxic) fire-preventive atmosphere at standard atmospheric or slightly increased pressure. The system employs an oxygen-extraction apparatus supplying oxygen-depleted air inside a human-occupied area or storing it in a high-pressure container for use in case of fire. A breathable fire-extinguishing composition, being mostly a mixture of nitrogen and oxygen and having oxygen content ranging from 12% to 17% for fire-preventive environments. The fire-suppression system is provided having fire-extinguishing composition with oxygen concentration under 16%, so when released it creates a breathable fire-suppressive atmosphere having oxygen content from 10 to 16%. A technology for automatically maintaining a breathable fire-preventive composition on board a human-occupied hermetic object is provided.